[4910-13-P]

DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA-2013-0029; Directorate Identifier 2013-NE-01-AD]

RIN 2120-AA64

Airworthiness Directives; Rolls-Royce plc Turbofan Engines

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Notice of proposed rulemaking (NPRM).

SUMMARY: We propose to adopt a new airworthiness directive (AD) for all Rolls-Royce plc (RR) RB211-535E4-B-37 series turbofan engines. This proposed AD was prompted by recalculating the life of certain life limited parts operated to certain flight profiles. This proposed AD would require removal of affected parts using a drawdown plan. We are proposing this AD to prevent the failure of critical rotating parts, which could result in uncontained failure of the engine and damage to the airplane.

DATES: We must receive comments on this proposed AD by [INSERT DATE 60 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

ADDRESSES: You may send comments, using the procedures found in 14 CFR 11.43 and 11.45, by any of the following methods:

• Federal eRulemaking Portal: Go to http://www.regulations.gov. Follow the instructions for submitting comments.

• Fax: 202-493-2251.

• Mail: U.S. Department of Transportation, Docket Operations, M-30, West Building Ground Floor, Room W12-140, 1200 New Jersey Avenue SE., Washington, DC 20590.

• Hand Delivery: Deliver to Mail address above between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays.

For service information identified in this proposed AD, contact Rolls-Royce plc, Corporate Communications, P.O. Box 31, Derby, England, DE248BJ; phone: 011–44–1332–242424; fax: 011–44–1332–249936 or email from http://www.rolls-royce.com/contact/civil_team.jsp, or download the publication from https://www.aeromanager.com. You may view this service information at the FAA, Engine & Propeller Directorate, 12 New England Executive Park, Burlington, MA. For information on the availability of this material at the FAA, call 781-238-7125.

Examining the AD Docket

You may examine the AD docket on the Internet at http://www.regulations.gov; or in person at the Docket Management Facility between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays. The AD docket contains this proposed AD, the regulatory evaluation, any comments received, and other information. The street address for the Docket Office (phone: 800-647-5527) is in the ADDRESSES section. Comments will be available in the AD docket shortly after receipt.

FOR FURTHER INFORMATION CONTACT: Robert Green, Aerospace Engineer, Engine Certification Office, FAA, Engine & Propeller Directorate, 12 New England Executive Park, Burlington, MA 01803; e-mail: robert.green@faa.gov; phone: 781-238-7754; fax: 781-238-7199.

SUPPLEMENTARY INFORMATION:

Comments Invited

We invite you to send any written relevant data, views, or arguments about this proposal. Send your comments to an address listed under the ADDRESSES section. Include “Docket No. FAA-2013-0029; Directorate Identifier 2013-NE-01-AD” at the beginning of your comments. We specifically invite comments on the overall regulatory, economic, environmental, and energy aspects of this proposed AD. We will consider all

comments received by the closing date and may amend this proposed AD because of those comments.

We will post all comments we receive, without change, to http://www.regulations.gov, including any personal information you provide. We will also post a report summarizing each substantive verbal contact we receive about this proposed AD.

Discussion

The European Aviation Safety Agency (EASA), which is the Technical Agent for the Member States of the European Community, has issued EASA AD 2012-0265, dated December 18, 2012 (referred to herein after as "the MCAI"), to correct an unsafe condition for the specified product. The MCAI states:

> Flight Profiles (FP) define the limits of engine operation within which the engine will qualify for use of an associated set of Critical Parts life limits. The Rolls-Royce RB211-535E4-B-37 engine previously had only one such FP and associated set of life limits published in the applicable RR Time Limits Manual.
>
> However, a recent review of operational flight data has revealed that some engines may have been operated beyond the currently valid datum FP.
>
> Failure to account for the correct rate of fatigue damage associated with engine operation may lead to Critical Parts failure, possibly resulting in release of high energy debris, damage to the aeroplane and/or injury to occupants.

We are proposing this AD to prevent the failure of critical rotating parts, which could result in uncontained failure of the engine and damage to the airplane. You may obtain further information by examining the MCAI in the AD docket.

Relevant Service Information

RR has issued Alert Non-Modification Service Bulletin (NMSB) No. RB.211-72-AG875, dated December 13, 2012. The Alert NMSB introduces two new datum flight profiles (Flight Profile D and Flight Profile E) and the life-limited part lives that are the drawdown plan retirement thresholds.

FAA's Determination and Requirements of This Proposed AD

This product has been approved by the aviation authority of the United Kingdom, and is approved for operation in the United States. Pursuant to our bilateral agreement with the European Community, EASA has notified us of the unsafe condition described in the MCAI and service information referenced above. We are proposing this AD because we evaluated all information provided by EASA and determined the unsafe condition exists and is likely to exist or develop on other products of the same type design. This proposed AD would require removal of affected parts using a drawdown plan.

Differences Between the AD and the MCAI or Service Information

This AD differs from EASA AD 2012-0265, dated December 18, 2012, as follows: The EASA AD specifies replacing the affected critical parts during the module disassembly if the subsequent, anticipated time on wing (time before next shop visit) plus current life of the part will exceed the new provisional lives published in the RR Alert NMSB. We specify replacing at next shop visit (defined by the separation of a major flange).

Costs of Compliance

We estimate that this proposed AD would affect about 377 engines installed on airplanes of U.S. registry. Of these 377 engines, we estimate 95 engines operate to Flight Profile D or E. The average labor rate is $85 per work hour. We do not estimate any labor cost is associated with this proposed AD because the affected parts are replaced at the

next shop visit. Prorated cost of parts adjusted to Flight Profile D operation, would cost about $77,672 per engine. Prorated cost of parts adjusted to Flight Profile E operation, would cost about $204,981 per engine. Based on these figures, we estimate the cost of the proposed AD on U.S. operators to be $11,834,655.

Authority for this Rulemaking

Title 49 of the United States Code specifies the FAA's authority to issue rules on aviation safety. Subtitle I, section 106, describes the authority of the FAA Administrator. Subtitle VII: Aviation Programs, describes in more detail the scope of the Agency's authority.

We are issuing this rulemaking under the authority described in Subtitle VII, Part A, Subpart III, Section 44701: "General requirements." Under that section, Congress charges the FAA with promoting safe flight of civil aircraft in air commerce by prescribing regulations for practices, methods, and procedures the Administrator finds necessary for safety in air commerce. This regulation is within the scope of that authority because it addresses an unsafe condition that is likely to exist or develop on products identified in this rulemaking action.

Regulatory Findings

We determined that this proposed AD would not have federalism implications under Executive Order 13132. This proposed AD would not have a substantial direct effect on the States, on the relationship between the national Government and the States, or on the distribution of power and responsibilities among the various levels of government.

For the reasons discussed above, I certify this proposed regulation:

(1) Is not a "significant regulatory action" under Executive Order 12866,

(2) Is not a "significant rule" under the DOT Regulatory Policies and Procedures (44 FR 11034, February 26, 1979),

(3) Will not affect intrastate aviation in Alaska to the extent that it justifies making a regulatory distinction, and

(4) Will not have a significant economic impact, positive or negative, on a substantial number of small entities under the criteria of the Regulatory Flexibility Act.

We prepared a regulatory evaluation of the estimated costs to comply with this proposed AD and placed it in the AD docket.

List of Subjects in 14 CFR Part 39

Air transportation, Aircraft, Aviation safety, Incorporation by reference, Safety.

The Proposed Amendment

Accordingly, under the authority delegated to me by the Administrator, the FAA proposes to amend 14 CFR part 39 as follows:

PART 39 - AIRWORTHINESS DIRECTIVES

1. The authority citation for part 39 continues to read as follows:

Authority: 49 U.S.C. 106(g), 40113, 44701.

§ 39.13 [Amended]

2. The FAA amends § 39.13 by adding the following new airworthiness directive (AD):

Rolls-Royce plc: Docket No. FAA-2013-0029; Directorate Identifier 2013-NE-01-AD.

(a) Comments Due Date

We must receive comments by [INSERT DATE 60 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

(b) Affected ADs

None.

(c) Applicability

This AD applies to Rolls-Royce plc (RR) RB211-535E4-B-37 series turbofan engines.

(d) Unsafe Condition

This AD was prompted by recalculating the life of certain life limited parts operated to certain flight profiles. We are issuing this AD to prevent the failure of critical rotating parts, which could result in uncontained failure of the engine and damage to the airplane.

(e) Compliance

Comply with this AD within the compliance times specified, unless already done.

(1) Within 30 days after the effective date of this AD for engines that have operated to Flight Profile D or E, recalculate the life of the low-pressure (LP) turbine disc stage 2, intermediate-pressure (IP) compressor rotor shaft (stage 1 to 6), high-pressure (HP) compressor rear rotor shaft assembly, and HP turbine disc installed on that engine. Use the part lives, prorated life formulas, and flight profiles in Appendices 2, 4, and 5 of RR Alert Non-Modification Service Bulletin (NMSB) No. RB.211-72-AG875, dated December 13, 2012, to make that calculation.

(2) Within 30 days after the effective date of this AD for engines that will operate to Flight Profile D or E, assign the Maximum Approved Lives defined in Appendix 2 of RR Alert NMSB No. RB.211-72-AG875, dated December 13, 2012, to the LP turbine disc Stage 2, IP compressor rotor shaft (stage 1 to 6), HP compressor rear rotor shaft assembly, and HP turbine disc based on the flight profile that will be flown.

(3) For engines that have only operated to, and will continue to operate to, Flight Profile C, as defined in Appendix 5 of RR Alert NMSB No. RB.211-72-AG875, dated December 13, 2012, no further action is required by this AD.

(4) For engines that incorporate an LP turbine disc stage 2, IP compressor rotor shaft (stage 1 to 6), HP compressor rear rotor shaft assembly, or HP turbine disc whose part life is defined by paragraph (e)(1) of this AD that have an engine shop visit (ESV) after the effective date of this AD, remove each part from service before the part exceeds the part life assigned in paragraph (e)(2) of this AD.

(5) For those engines that incorporate an LP turbine disc stage 2, IP compressor rotor shaft (stage 1 to 6), HP compressor rear rotor shaft assembly, or HP turbine disc whose part life is defined by paragraph (e)(1) of this AD, that do not have an ESV after the effective date of this AD before the part exceeds the part life assigned in paragraph (e)(2) of this AD, remove the part from service at the next ESV.

(f) Installation Prohibition

After the effective date of this AD, any LP turbine disc stage 2, IP compressor rotor shaft (stage 1 to 6), HP compressor rear rotor shaft assembly, or HP turbine disc whose part life is defined by paragraph (e)(1) of this AD that is re-installed in any engine after the effective date of this AD must be removed from service before the part exceeds the part life assigned in paragraph (e)(2) of this AD.

(g) Definitions

For the purpose of this AD, ESV is whenever engine maintenance performed prior to reinstallation requires the separation of a pair of major mating engine module flanges. Separation of flanges solely for the purpose of shipment without subsequent internal maintenance, is not an ESV.

(h) Alternative Methods of Compliance (AMOCs)

The Manager, Engine Certification Office, may approve AMOCs for this AD. Use the procedures found in 14 CFR 39.19 to make your request.

(i) Related Information

(1) For more information about this AD, contact Robert Green, Aerospace Engineer, Engine Certification Office, FAA, Engine & Propeller Directorate, 12 New England Executive Park, Burlington, MA 01803; email: robert.green@faa.gov; phone: 781-238-7754; fax: 781-238-7199.

(2) Refer to EASA AD 2012-0265, dated December 18, 2012, for related information.

(3) For service information identified in this AD, contact Rolls-Royce plc, Corporate Communications, P.O. Box 31, Derby, England, DE248BJ; phone: 011–44–1332–242424; fax: 011–44–1332–249936 or email from http://www.rolls-royce.com/contact/civil_team.jsp, or download the publication from https://www.aeromanager.com. You may view this service information at the FAA, Engine & Propeller Directorate, 12 New England Executive Park, Burlington, MA. For information on the availability of this material at the FAA, call 781-238-7125.

Issued in Burlington, Massachusetts, on March 29, 2013.

Colleen M. D'Alessandro,
Assistant Manager, Engine & Propeller Directorate,
Aircraft Certification Service.

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